

# **U.S. Army Center for Health Promotion and Preventive Medicine**

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## **A SOLDIER'S GUIDE TO STAYING HEALTHY IN INDIA AND BANGLADESH**

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### Table of Contents

	Page
INTRODUCTION.....	1
INDIA AND BANGLADESH OVERVIEW .....	2
INDIA AND BANGLADESH RISK ASSESSMENT .....	2
VECTOR-BORNE DISEASES .....	3
FOOD-BORNE AND WATER-BORNE DISEASES.....	3
ANIMAL-CONTACT DISEASES .....	4
WATER-CONTACT DISEASES AND SKIN INFECTIONS .....	4
DANGEROUS ANIMALS AND PLANTS.....	5
RESPIRATORY AND SEXUALLY TRANSMITTED DISEASES .....	5
HOT AND COLD WEATHER INJURIES .....	6
TOXIC INDUSTRIAL CHEMICALS AND MATERIALS.....	6
SAND, WIND, AND DUST .....	6
HIGH ELEVATIONS .....	7
ORAL HEALTH .....	7
HEARING PROTECTION .....	7
FIELD SANITATION TEAM.....	8
PRE-DEPLOYMENT HEALTH INFORMATION .....	8
INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED .....	8
POST-DEPLOYMENT HEALTH INFORMATION.....	8

### INTRODUCTION

This country-specific guide should be used in conjunction with [GTA 08-05-062, Guide to Staying Healthy](#) and is intended to provide information that can help reduce your risk of Disease and Non-battle Injuries (DNBI) when deployed. This health threat and countermeasure information is based on the most current data available from U.S. Department of Defense medical agencies at the time of production. In addition to the information in this guide, you should also receive force health protection, health threat, and preventive medicine countermeasure training/briefings prior to and, as required, throughout the length of your deployment.

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## INDIA AND BANGLADESH OVERVIEW

[India](#) is the seventh largest country in the world at slightly more than one-third the size of the United States. The country is composed of four geographic regions: the Himalayas, the Indo-Gangetic Plain, the northwest desert region, and the Indian Peninsula. The Himalayas are in northern India and consist of three parallel mountain ranges interspersed with large plateaus and valleys. The rugged, steep mountains are covered with snow year-round and average 20,000 feet in height. Further south is the Indo-Gangetic Plain, a large flood plain. The desert region of the northwest contains sand dunes and ridges, some almost 200 feet high. The Indian Peninsula is an interior plateau that is bordered by parallel mountain ranges. Offshore islands include the Andaman and Nicobar Islands in the eastern Indian Ocean and Lakshadweep Islands in the Arabian Sea. The climate in India is cool and dry in the winter months of December through February. The temperatures in the mountains are extremely cold. The summer season, which lasts from March through May, is dry and hot throughout most of India. Once again, areas with higher elevations remain cooler. The monsoon (rainy) season is June through November. The extreme weather during this season can do great damage. [Bangladesh](#), slightly smaller in size than Iowa, consists of two major geographic regions: the Bengal Plain (lower Indo-Gangetic Plain) and the Chittagong Hill Tract. The Bengal Plain covers the majority of the country with its coastal marshes, mangrove forests, exceptionally fertile soil, and a vast estuary (type of river). The Chittagong Hill Tract constitutes one-sixth of the country, forming a minor hill system in southeastern Bangladesh. Three seasons influence the tropical climate of Bangladesh: a dry, sunny, cooler season (mid-October through February); the hot season (March through May); and the hot, rainy, monsoon season (June through mid-October). The monsoon season can bring much damage and flooding.

## INDIA AND BANGLADESH RISK ASSESSMENT

Based on a combination of all major infectious diseases that occur in a country, an [overall country risk level](#) is assigned. Countries can be rated as low, intermediate, high, or very high risk. India and Bangladesh are HIGH RISK for infectious diseases. All diseases are preventable when force health protection measures are followed. The greatest short-term health risks are associated with drinking water contaminated with raw sewage, industrial waste or fecal pathogens, and with high heat and humidity. High altitude and extreme cold weather also pose health risks in the mountains. Contaminated food and air pollution in urban areas and industrial zones also pose health risks. The greatest long-term health risks are associated with urban and industrial air pollution, and water contaminated with naturally occurring arsenic and fluorides. This guide discusses specific disease and environmental risks and ways to eliminate or lessen those risks.

## VECTOR-BORNE DISEASES

Vector-borne diseases are diseases that are contracted through the bite of an insect. The vector-borne diseases of greatest risk are—

- [Dengue fever](#), a serious disease that is contracted from the bite of a mosquito carrying the virus.
- [Japanese encephalitis](#), a serious disease that is contracted from the bite of a mosquito carrying the disease.
- [Malaria](#), a serious illness that is contracted from the bite of a mosquito carrying the disease.

Other vector-borne diseases that pose a lesser risk to you are [Crimean-Congo hemorrhagic fever](#), [Kyasanur Forest disease](#) and [rickettsioses \(spotted fever group\)](#) from ticks; [chikungunya virus](#) and [West Nile fever](#) from mosquitoes; [leishmaniasis](#) and [sandfly fever](#) from sand flies; [murine typhus](#) from fleas; and [scrub typhus](#) from mites.

Your local medical authority will determine if these diseases or other vector-borne diseases are a threat in your specific location and provide appropriate countermeasures.

### PREVENTION

- There is medicine you must take to help prevent malaria. Take your malaria prevention pills when directed to do so. This is CRITICAL. Normally, you will begin taking medication before arriving in the area, while in the area, and after returning home.
- When deployed to this region, use the [DOD Insect Repellent System](#) detailed in [GTA 08-05-062](#) to reduce your risk of acquiring a vector-borne disease.
- Wear [permethrin](#)-treated uniforms with trousers tucked into boots, sleeves rolled down, and undershirt tucked into trousers. Wear N-diethyl-meta-toluamide (DEET) on exposed skin.
- When deployed to this region, [sleep under a permethrin-treated bed net](#) to repel insects and further reduce risks of vector-borne diseases.
- When using both DEET and sunscreen products, apply sunscreen to the skin first so it does not interfere with the effectiveness of the DEET. After 30 minutes to an hour, apply the DEET. This allows the sunscreen to penetrate and bind to the skin first.

## FOOD-BORNE AND WATER-BORNE DISEASES

### DISEASE RISKS

Food-borne and water-borne diseases are caused by eating food or drinking water that contains the bacteria, parasites or viruses that cause certain diseases. You are at great risk of contracting food- and water-borne diseases in this area. The food- and water-borne diseases of greatest risk are—

- [Diarrhea \(bacterial and protozoal\)](#) (travelers' diarrhea). The risk is worse after flooding.

- [Hepatitis A and E](#). These are food- or water-borne diseases that can make you sick for a month or more. The risk is worse after flooding.
- [Typhoid/paratyphoid fever](#). One can carry typhoid and give it to others without getting sick.

Other food- or water-borne diseases that pose a lesser risk to you are [brucellosis](#) (often caused by eating contaminated dairy products) and [cholera](#).

#### PREVENTION

- Assume all non-approved food, ice, and water is contaminated. You should not drink local tap water, fountain drinks, or ice cubes. Do not eat any food or drink any water or a beverage (including bottled water) that has not been approved by the U.S. military as these may be contaminated. Even a one-time consumption of these foods or water may cause severe illness.
- See [GTA 08-05-062](#) for appropriate countermeasures.

## ANIMAL-CONTACT DISEASES

#### DISEASE RISKS

Animal contact diseases are diseases that are contracted by coming into contact with the bodily fluids of an animal. The animal contact disease of greatest risk is rabies. [Rabies](#) is a serious illness that is contracted from the bite of an animal carrying the disease. It is fatal without treatment. Dogs are the main source of rabies in the area. There is also a risk of [Q fever](#) by inhaling dust that contains the organisms that cause the disease.

#### PREVENTION

- Avoid contact with all animals.
- If bitten, seek medical attention immediately.
- Keep living quarters free of rodents, and stay clear of buildings infested with rodents.
- Always check dug-in fighting positions for potentially dangerous animals.
- Clean your skin and clothing after contact with animals or dust.

## WATER-CONTACT DISEASES AND SKIN INFECTIONS

#### DISEASE RISKS

Water-contact diseases are most often acquired by swimming or wading in contaminated water. The water-contact disease of greatest risk is [leptospirosis](#). There is also a risk of [schistosomiasis](#). Leptospirosis is caused by bacteria, and schistosomiasis is caused by parasitic worms. Skin irritations and infections, such as athlete's foot and ringworm, are also common medical threats during any deployment and are commonly caused by fungi that thrive in moist conditions.

#### PREVENTION

- Do not swim or wade in water that has not been treated with chlorine; if you must, wear protective clothing and footwear.
- Never go barefoot.

- Clean your skin and clothing after wading or swimming in freshwater ponds or streams.
- To prevent skin infections, maintain clean, dry skin.
- See [GTA 08-05-062](#) for additional countermeasure information.

## **DANGEROUS ANIMALS AND PLANTS**

### **RISKS**

- Over 50 species of highly poisonous snakes, including kraits, cobras, coral snakes, vipers, and sea snakes, live in the region. Compared to all other regions, Bangladesh and India have the highest incidence of snakebite deaths.
- Poisonous frogs and toads are also present throughout the region.
- Scorpions, centipedes, and spiders, some with potentially fatal venom, are present throughout the region.
- Large leeches, abundant in wet areas and forests, are not poisonous, but can cause slow-healing ulcers.
- Some regional plants have thorns, stinging hairs, or toxic resins that may puncture the skin or introduce poison into the skin causing skin irritation, rashes or infections. Contact with the smoke from the burning of these plants can also cause skin rashes and damage to your lungs.
- Numerous regional plants, some with fruits or seeds closely resembling edible species, may cause systemic poisoning if leaves, berries, flowers, or other plant parts are chewed or swallowed. Symptoms include dizziness, vomiting, irregular heartbeat, and delirium or hallucinations.

### **PREVENTION**

- Consider any snake encountered as poisonous, and do not handle. Avoid contact with all wildlife.
- Seek immediate medical attention if bitten or stung by any animal or insect; untreated snakebites may cause serious illness or death within 1 hour.
- If possible, avoid sleeping on the ground.
- Shake out boots, bedding, and clothing prior to use, and never walk barefoot.
- Avoid skin contact with plants when possible.
- Use DEET to provide effective protection from terrestrial leeches.
- Clean your clothing with soap and water after contact with animals or harmful plants.

## **RESPIRATORY AND SEXUALLY TRANSMITTED DISEASES**

### **RISKS**

There is a risk of being exposed to the bacteria that causes [tuberculosis](#) (TB). Breathing in the bacteria that someone coughed or sneezed into the air spreads TB. Being exposed to the bacteria will cause a positive skin test even if you do not become sick. If you have a positive skin test, you may still be treated even if you have no symptoms. Soldiers are also at risk of contracting sexually transmitted diseases ([STDs](#)) such as [gonorrhea](#), [chlamydia](#), human Immunodeficiency virus ([HIV](#))/[acquired immune deficiency syndrome \(AIDS\)](#) and [hepatitis B](#). HIV/AIDS and hepatitis B are potentially

fatal STDs that can also be passed by sharing needles. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term impact on your individual health is great.

#### PREVENTION

- There is a vaccine for hepatitis B but not for any other STD. **Anyone deployed to the region should not have unprotected sex and should not share needles.**
- Those deployed should see [GTA 08-05-062](#) for appropriate countermeasures.

## HOT AND COLD WEATHER INJURIES

Heat injuries are possible when deployed to this region, especially in the desert and during the early phase of deployment; acclimatization is critical. Individual and unit countermeasures are extremely important. Cold injuries can also occur in the mountainous areas of this region. The effects of cold weather are more severe in high mountainous areas due to reduced oxygen and lower air pressure. When deploying to the mountainous areas in this region, check with your unit on the requirement for packing the extended cold weather clothing system. See [GTA 08-05-062](#) for appropriate countermeasures.

## TOXIC INDUSTRIAL CHEMICALS AND MATERIALS

When deployed, you may face health risks from industrial chemicals and materials as a result of activities by terrorists or warring parties; accidents related to improper design, maintenance, or operation of indigenous industrial facilities; inadvertent exposure to toxic waste materials in the environment; or improper handling or disposal of hazardous material with which our own forces deploy. The degree of health risks depends upon many parameters. Consult your medical authority for additional information.

## SAND, WIND, AND DUST

Severe sandstorms and dust storms can occur in the desert region. Heat, sand, wind, and dust cause health problems, particularly to skin, eyes, nose, throat and lungs. Take care of problems early to avoid infection. High winds can turn loose objects into flying missiles (which may not be visible in blowing sand). To help avoid problems—

- Take a daily sponge bath, using an approved water source.
- Wash your face and eyelids several times per day.
- Carry at least two pairs of glasses and a copy of your prescription. Do not wear contact lenses; [AR 40-63](#) prohibits contact lens use during a military deployment.
- Carry artificial tear drops to use if you get something in your eye or your eyes feel dry.
- Breathe through a wet face cloth, or coat the nostrils with a small amount of petroleum jelly to minimize drying of mucous membranes. Protect your lips with lip balm.
- Shield your face with cloth materials to protect from blowing dust and sand.
- Wear goggles (NSN 8465-01-328-8268) to protect your eyes from wind, dust, and sand or when traveling in open vehicles.

- Wear gloves and use moisturizing skin lotion to protect your hands.

## **HIGH ELEVATIONS**

- Military operations occurring at elevations over 6,000 feet can be dangerous due to low levels of oxygen. Serious illness or death can result if you increase your elevation rapidly without allowing for acclimatization. Remain well hydrated; you need more fluids at higher altitudes.
- Symptoms of mountain sickness include headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately if you experience any of these symptoms.
- Pyridostigmine bromide tablets may increase the chance of dizziness or fainting during the first 24 hours at high altitude if you are not acclimatized.
- When wearing mission-oriented protective posture (MOPP) gear at higher altitudes, you may require more time and concentration to perform assigned tasks.
- For appropriate countermeasures during high altitude operations, see [GTA 08-05-062](#) and [GTA 08-05-060, A Soldier's Guide to Staying Healthy at High Elevations](#).

## **ORAL HEALTH**

[Dental disease](#) is a common problem during deployments because it is not easy to take care of your mouth. You should deploy with toothbrush, dental floss, and fluoride toothpaste. You should brush your teeth twice a day and floss your teeth once a day. This is the best way to prevent gum disease, trench mouth and tooth decay. In difficult tactical environments, teeth should be brushed at least once a day. Seek medical attention immediately at the onset of any dental problems. You are more vulnerable to other diseases when your mouth is not healthy.

## **HEARING PROTECTION**

It is essential that you use properly fitted [hearing protection](#) during military operations. Exposure to high-intensity noise may cause hearing loss. Good hearing is essential to mission success. If you are a dismounted soldier, the [Combat Arms Earplug](#) (NSN 6515-01-466-2710) will protect you from the impact noise of weapons fire while only slightly interfering with voice communications and detection of combat sounds such as vehicle noise, footfalls in leaves, and the closing of a rifle bolt. While not as effective as the Combat Arms Earplug in preserving your ability to hear important mission-related sounds, noise muffs or standard earplugs are very effective at preventing noise-induced injury. If you are a member of vehicle or helicopter crews, your combat vehicle crew or aircrew helmets have built-in hearing protectors.



## **FIELD SANITATION TEAM**

Each company-sized unit has a Field Sanitation Team (FST) whose members are trained (40-hour course) and fully equipped according to [AR 40-5](#), [FM 4-25.12](#), and [FORSCOM REG 700-2](#). Know who the members of your FST are, and know how they can assist in preventing medical threats to your health. Become familiar with FST equipment and training.

## **PRE-DEPLOYMENT HEALTH INFORMATION**

- [Complete the Pre-Deployment Health Assessment \(DD FORM 2795\)](#) to assess your state of health before deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- You will not have access to your health care record during the deployment. The Adult Preventive and Chronic Care Flowsheet ([DD FORM 2766](#)) will be used as your deployment health record. This document will include information on all your immunizations, any medications you are currently taking, and any ongoing medical problems that you may have. When you go through readiness processing, ensure that all appropriate information is documented on your DD FORM 2766. When you return home, this information will be placed in your regular health record.

## **INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED**

- It is important that you know where to seek health care while deployed. This may or may not be through the same channels as your home station. Ask your chain of command for more information.
- While deployed, you must maintain your health and seek care whenever an illness or injury affects your work. Your unit is depending on you. It is always better to seek care early so your problems can be documented appropriately and taken care of immediately. When problems are caught early, they are usually easier to treat.

## **POST-DEPLOYMENT HEALTH INFORMATION**

- [Complete the Post-Deployment Health Assessment \(DD FORM 2796\)](#) to assess your health after deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- If you become sick after you return home, tell your doctor that you were deployed.
- Complete malaria medications as directed, and receive follow-on medical care/tests as directed.

**Contact your Preventive Medicine or Medical Support Unit for more information.**



*Prepared by:*

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